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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/825,087	04/02/2001	Cem Basceri	MI22-1483	1701

21567 7590 02/23/2004  
WELLS ST. JOHN P.S.  
601 W. FIRST AVENUE, SUITE 1300  
SPOKANE, WA 99201

EXAMINER
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TALBOT, BRIAN K

ART UNIT	PAPER NUMBER
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1762

DATE MAILED: 02/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/825,087

Applicant(s)

BASCERI ET AL.

Examiner

Brian K Talbot

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 and 40-58 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 55, 57 and 58 is/are allowed.
- 6) ☒ Claim(s) 1-21, 40-54 and 56 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/23/03</u> . | 6) <input type="checkbox"/> Other: _____  |

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1. The amendment filed 10/23/03 has been considered and entered. Claims 1-21 and 40-58 remain in the application.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

***Claim Rejections - 35 USC § 112***

3. Claim 56 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 56 is not further limiting as independent claim 55 already teaches the capacitor plate comprising Pt or Ru.

***Allowable Subject Matter***

4. Claims 55, 57 and 58 are allowed.

The following is a statement of reasons for the indication of allowable subject the prior art fails to teach or fairly suggest forming capacitor-to-plate dielectric interface comprising a first capacitor plate of Pt or Ru on a semiconductive substrate, an interface layer consisting of the

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claims materials formed by chemisorption on the first capacitor plate and a second capacitor plate atop the interface layer.

***Claim Rejections - 35 USC § 103***

5. Claims 1-21 and 40-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suntola et al. (4,058,430) (a) alone or (b) in combination with Yu et al. (6,241,821 B1) or Marscher (4,109,031).

Suntola et al. (4,058,430) teaches forming a compound film whereby a substrate is subjected to a vapor of a first element at a temperature to form a single atomic layer thereon, the a vapor of a second element is introduced to form a second atomic layer atop the first atomic layer. This is repeated until a desired thickness is achieved and then the layers are heated to form the compound film (see abstract and col. 6 - col. 7). Suntola et al. (4,058,430) teaches partial coverage can be achieved of the first element on the substrate and then forming the second element (col. 9, lines 20-60 and claim 7).

Suntola et al. (4,058,430) fails to teach forming a first element layer and a second element layer surrounding or sandwiching the compound layer (interlayer).

(a) While the Examiner acknowledges the fact that the reference is silent upon forming the compound layer between two layers, it is the Examiner's position that one skilled in the art at the time the invention was made would have had a reasonable expectation of achieving similar results regardless of whether or not the compound layer was formed on a substrate or on a deposited film.

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(b) Yu et al. (6,241,821 B1) teaches forming single atomic layer interface layers between two layers. The interface layer can be comprised of Si, O, and a metal. A layer of BaO or SrO can be applied to a substrate prior to the interface layer being applied thereto and a subsequent layer can be applied to the interface layer. The interface layer is applied by chemisorption. (col. 2, line 15 – col. 4, line 40).

Marscher (4,109,031) teaches forming gradient layer between metal and ceramic layers which are comprised of 100% metal adjacent the metal to 100% ceramic with variations throughout the interlayer with an increase in ceramic material the more further away from the metal (col. 1, lines 10-30 and col. 2, lines 22-60). While the Examiner acknowledges the fact that Marscher (4,109,031) does not disclose chemisorption for the depositing layers, it is the Examiner's position that the use of gradient layer between different materials to alleviate the differences in thermal expansion/stresses upon subsequent heating would be achieved regardless of what technique was utilized to form the layers. In addition, some of the claims recite the first material being metal (Pt or Ru) and the second material being a metal oxide (TaO or titanates) which are similar to the materials disclosed in Marscher (4,109,031).

Therefore, it would have been obvious at the time the invention was made to have modified Suntola et al. (4,058,430) process by performing the chemisorption layer between layers as evidenced by Yu et al. (6,241,821 B1) because of the expectation of achieving similar success.

***Response to Amendment***

6. Applicant's arguments filed 10/23/03 have been fully considered but they are not persuasive.

Applicant argued that the amendments to claim 55, including reciting the capacitor plate, semiconductive substrate and the specific materials, would overcome the art of record. The Examiner agrees that this combination would render the claims allowable as note above.

However, it is noted that no arguments were directed toward the other remaining claims (1-21 and 40-54) and hence the claimed rejections is maintained. In addition, these claims did not recite all the necessary features as noted in claim 55.

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian K Talbot whose telephone number is (571) 272-1428. The examiner can normally be reached on Monday-Friday 6AM-3PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive P Beck can be reached on (571) 272-1415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Brian K Talbot  
Primary Examiner  
Art Unit 1762

BKT